

CLAIMS

What is claimed is:

1. A method of testing semiconductor die comprising the acts of:

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forming a stack of at least two semiconductor die; and

after the stack is formed, testing the semiconductor die in the stack prior to
attaching the semiconductor die to a packaging substrate.

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2. The method, as set forth in claim 1, where the act of forming comprises the acts
of:

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a) picking up a first die having a topside and an underside with a die picking
tool;

b) applying adhesive to the underside of the first die, thereby providing an
adhesively coated underside of the first die; and

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c) without releasing the first die from the die picking tool, picking up a
second die having a topside and an underside by placing the adhesively coated underside
of the first die against the topside of the second die, thereby forming a die stack.

3. The method, as set forth in claim 2, wherein the first die is thicker than the second die.

5 4. The method, as set forth in claim 2, wherein the acts (a), (b), and (c) are performed in the recited order.

5. The method, as set forth in claim 2, wherein act (b) is performed before act (a).

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6. The method, as set forth in claim 2, comprising the act of applying adhesive to the underside of the second die, thereby providing an adhesively coated underside of the second die.

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7. The method, as set forth in claim 6, comprising the act of without releasing the first die from the picking tool, picking up a third die having a topside and an underside by placing the adhesively coated underside of the second die against the topside of the third die.

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8. The method, as set forth in claim 1, wherein the act of forming comprises the act of forming a stack of at least three semiconductor die.

5 9. The method, as set forth in claim 1, wherein the act of testing comprises the act of:

after the stack is formed, functionally testing the semiconductor die in the stack prior to attaching the semiconductor die to the packaging substrate.

10 10. The method, as set forth in claim 1, wherein the act of testing comprises the act of:

after the stack is formed, environmental testing the semiconductor die in the stack prior to attaching the semiconductor die to the packaging substrate.

11. The method, as set forth in claim 1, comprising the act of coupling the tested stack to the packaging substrate.

20 12. The method, as set forth in claim 1, wherein packaging substrate comprises a tape reel.

13. The method, as set forth in claim 1, wherein the packaging substrate comprises a film frame.

5 14. The method, as set forth in claim 1, wherein the packaging substrate comprises a gel pack.

10 15. The method, as set forth in claim 1, wherein the packaging substrate comprises a wafer.

16. The method, as set forth in claim 1, comprising the acts of:

15 applying a first adhesive between each of the at least two semiconductor die, the first adhesive being curable at a first temperature; and

applying a second adhesive between the stack and the packaging substrate, the second adhesive being curable at a second temperature lower than the first temperature.

20 17. The method, as set forth in claim 1, wherein the act of forming comprises forming a shingle stack.

18. The method, as set forth in claim 11, comprising the act of using the tested stack coupled to the packaging substrate to form an integrated circuit package.

5 19. The method, as set forth in claim 18, comprising the act of electrically coupling the integrated circuit package to a processor to form an electronic system.

10 20. The method, as set forth in claim 1, wherein at least one of the at least two semiconductor die comprises a memory die.